a test reaction is performed on every batch at different time periods for example, from 10–50 hours. The results concerning the molecular weights of these small scale reactions are calculated and a curve of molecular weight against time is drawn. The time needed for obtaining molecular weight 7,000±2,000 Da is calculated from the curve and performed on larger scale reaction. On average, working at 26° C. the time period is 17 hours. The product is poured into excess water, filtered, washed and dried, yielding the trifluoroacetyl-copolymer-1.

Preparation of Low-Toxicity Copolymer-1

20 g of trifluoroacetyl-copolymer-1 are dispersed in 1 liter of water to which 100 g piperidine are added. The mixture is stirred for 24 hours at room temperature and filtered. The solution of crude copolymer-1 is distributed into dialysis bags and dialyzed at 10°–20° C. against water until a pH=8 is attained. It is then dialyzed against about 0.3% acetic acid and again water until a pH=5.5–6.0 is obtained. This solution is then concentrated and lyophilized to dryness.

We claim:

**1**. Copolymer-1 having over 75% of its molar fraction within the molecular weight range from about 2 kDa to about 20 kDa, prepared by a process comprising the steps of:

reacting protected copolymer-1 with hydrobromic acid to form trifluoroacetyl copolymer-1 having over 75% of its molar fraction within the molecular weight range from about 2 kDa to about 20 kDa, wherein said reaction takes place for a time and at a temperature predetermined by test reaction, and

treating said trifluoroacetyl copolymer-1 having over 75% of its molar fraction within the molecular weight range from about 2 kDa to about 20 kDa with aqueous piperidine solution to form copolymer-1 having over 75% of its molar fraction within the molecular weight range from about 2kDa to about 20kDa.

**2**. The copolymer-1 of claim **1** wherein said protected copolymer-1 is reacted with hydrobromic acid for about 10–50 hours at a temperature of about 20–28° C.

**3**. The copolymer-1 of claim **1**, wherein said protected copolymer-1 is reacted with hydrobromic acid for about 17 hours at a temperature of about 26° C.

**4**. Trifluoroacetyl copolymer-1 having over 75% of its molar fraction within the molecular weight range from about 2 kDa to about 20 kDa, produced by a process comprising the steps of reacting protected copolymer-1 with hydrobromic acid for a time and at a temperature predetermined by test reaction.

**5**. The trifluoroacetyl copolymer-1 of claim **4** wherein said protected copolymer-1 is reacted with hydrobromic acid for about 10–50 hours at a temperature of about 20–28° C.

**6**. The trifluoroacetyl copolymer-1 of claim **5** wherein said protected copolymer-1 is reacted with hydrobromic acid for about 17 hours at a temperature of about 26° C.

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